Certificate No:
TAA0000328

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)
ARA Series Panel PC

Issued to
Binconet Marine Solutions Co.,Ltd.
Busan, Korea, Republic of

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Location classes:

Temperature	**A**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**B (IP65 for Panel PC front)**

Issued at **Busan** on **2022-04-05**
This Certificate is valid until **2027-03-31**.
DNV local station: **Gimhae Station**

Approval Engineer: **Dong Ho Park**

for **DNV**

Hanwee Low
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

BMS's ARA Series Panel PC:

	Detail	ARA-15ixS-MPPC	ARA-19ixS-MPPC	ARA-27ixS-MPPC
Display	Size	15.6 Inch (16:9)	19 Inch (4:3)	27 Inch (16:9)
	Luminance	400cd/m2 typ.	250cd/m2 typ.	350cd/m2 typ.
	Contrast, Resolutions	700: 1 (typ.), 1920 x 1080	1,000: 1 (typ.), 1280 x 1024	3,000: 1 (typ.), 1920 x 1080
	Pixel Pitch	0.17925 mm x 0.17925 mm	0.294 mm x 0.294 mm	0.31125 mm x 0.31125 mm
System	Process	Intel® Core™ i5/ i7 processor	Intel® Core™ Celeron/ i3/ i5/ i7 processor	Intel® Core™ i5/ i7 processor
	Chipset	SOC	Intel® H310	SOC
	Memory	4GB DDR4 (Supports up to 32GB System memory)		
	Graphics	Intel HD Graphics		
	Dimmer	Digital Dimmer (0~100% Full Dim)		
	Storage	120GB SSD (M.2 SATA UP to 960GB), 1* SATA III		
	I/O	1* Speaker Out, 1* Mic in, 1* RS232 /422 /485		
		2* USB3.0 (Rear), 2* USB2.0 (Rear) , 1* USB2.0 (Front)	4* USB3.1 (Rear), 1* USB2.0 (Front)	2* USB3.0 (Rear), 2* USB2.0 (Rear), 1* USB2.0 (Front)
	Ethernet	2* LAN (Gigabit network interface)		
	Display Ports	1* DB15 VGA	NONE	1*DB15 VGA
	Speaker	2* 2.0W(8 ohm ±15% at 1㎑, Front)		
	OS	Windows 7, Windows 10, Window 11		
Power	Standard	24V DC (16.8~31.2V) Power supply with terminal block		
	Consumption	100W (Max)	150W(Max)	100W(Max)
	Optional	Adapter / 90~264 VAC / 47~63㎐		

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

Marking of product

The products to be marked with:
- manufacturer name
- model name
- serial number
- power supply ratings

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE